

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 61045 BM/VB	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/FR2004/002011	International filing date (day/month/year) 27.07.2004	Priority date (day/month/year) 01.08.2003
International Patent Classification (IPC) or national classification and IPC C02F3/30, C02F3/06		
Applicant SUEZ ENVIRONNEMENT		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

- a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:
- ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
- ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____

_____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/002011

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-13 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1-9 _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/4-4/4 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/002011

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	<u>1-9</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-9</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-9</u>	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
1. In the present report, reference is made to the following documents:			
D1: EP 0 524 794 A (THAMES WATER UTILITIES) 27 January 1993;			
D2: US 5 795 481 A (LESOUF ANDRE) 18 August 1998.			
2. Document D1, which is considered to be the most relevant prior art, describes (the references between parentheses apply to said document):			
a fixed film reactor on a carrier, which reactor comprises two compartments (see figures 3 and 4) provided with packing, and an effluent supply system consisting of a rotary arm (see page 4, line 8) that alternately supplies effluent to the surface of each of said compartments.			
The subject matter of independent claim 1 differs from the above mainly in that said compartments are arranged in parallel and operate alternately,			

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/002011

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i.e. when one compartment is in the filling phase, the other is in the discharge phase.

- 2.1 It follows that the subject matter of claim 1 is novel (PCT Article 33(2)).

The problem that the present invention is intended to solve can be considered to be that of providing for self-cleaning of the excess biomass in the reactor compartments by removing the aeration systems.

- 2.2 The solution to this problem, as proposed in claim 1 of the present application, is not described or suggested in the prior art.

D1 describes compartments which are arranged in series and in which the alternate supply of effluent is intended to enhance efficacy. The system must be backwashed in order to remove the excess biomass.

D2 describes nitrification reactors that operate in parallel. This document does not describe a self-cleaning system for the excess biomass.

A person skilled in the art would not be able to arrive at the reactor in the subject matter of claim 1 without exercising inventive skill (PCT Article 33(3)).

- 2.3 Claims 2-9 are dependent on claim 1 and, as such,

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/002011

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

therefore also fulfil the PCT requirements of
novelty and inventive step.